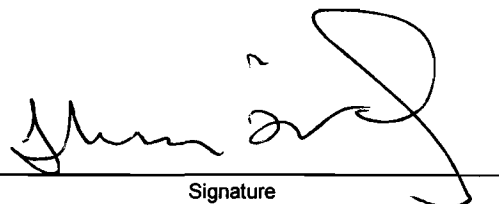


PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) P1571	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____	Application Number 10/781,353	Filed 2/17/2004	
	First Named Inventor Jennifer Wang		
	Art Unit 2814	Examiner Anh D. Mai	
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <p><input type="checkbox"/> applicant/inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. 53,746 Registration number _____</p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p> <p><input type="checkbox"/> *Total of _____ forms are submitted.</p>			



Signature

Theresa J. Wasilausky

Typed or printed name

831-649-8800

Telephone number

April 30, 2007

Date


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Typed or Printed Name of Person Mailing Paper or Fee: Patricia Aguillon

Signature: 

PATENT
Docket No. P1571

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: JENNIFER WANG
MIKE BARSKY

SERIAL NO. 10/781,353 EXAMINER: ANH D. MAI

FILED: FEBRUARY 17, 2004 ART UNIT: 2814

TITLE: VIA FORMED IN POLYMER LAYER

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

This paper sets forth the reasons for the Pre-Appeal Brief Request. Claims 1-27 are currently pending. Non-elected invention Claims 1-20 are withdrawn from consideration. Claims 21-27 have been rejected. The Office Communication of January 31, 2007 has been made final. This request is to concisely identify the omission of one or more essential elements needed for a prima facie rejection.

Claims 23 and 24 have been objected to under 37 CFR 1.75 (c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. It is apparent that the Examiner is not comprehending the steps involved in the process to create the claimed device since he is applying elements to claims that are not correct. Claims 23 and 24 further limit the subject matter of the previous claim by further limiting the length of the tapered sidewall to a specific range. This does not apply to the hard mask layer, but to the polymer layer, therefore there is no logical reasoning behind the Examiners objection. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 8-9 section 2.

Claims 21-27 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the written description requirement. The Examiner argues that there does not appear to be a written description of the claim limitation “the via hole comprises an aspect ratio which is greater than 1, and is of substantially the same diameter throughout the depth of the via hole”.

The Examiner supports his argument with cites to the specification, page 8, [0032], regarding the tapered sidewall. It is clearly obvious to one skilled in the art that when Applicants refer to a tapered sidewall, they are not referring to the depth of the via that is substantially the same diameter. There is a clear distinction set out in the specification at p. 6, [0026], as well as Figs. 2B and 2C, that releasing a first fluoride gas into the chamber, etches a hard mask opening for defining a via hole, and then a second fluoride gas is released into the chamber to etch an exposed portion of the polymer layer defining said via hole with a vertical sidewall. This via hole has substantially the same diameter throughout the depth of the via hole. Applicants have brought to the Examiners attention that when the third fluoride gas is released creating the tapered sidewall, the tapered portion of the via hole is distinctly different from that portion of the via hole having substantially the same diameter. No new matter has been added by the descriptive words “substantially the same diameter throughout the depth of the via hole” as it is clearly defined in the specification as the result of releasing the second fluoride gas into the chamber. Once again, the Examiner is not comprehending the details of the process involved to create the device. Therefore a prima facie case of 35 U.S.C. 112, second paragraph has not been proven. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 9 section 3.

The Examiner has rejected Claims 22-24 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements. Once again, the Applicants believe that the Examiner has failed to recognize that in this claim, the semiconductor substrate placed in the chamber already includes a polymer layer defining a sub-micron wide via-opening deposited on said polymer layer. Therefore, when the third fluoride gas is released in the chamber, it etches the hard mask and an exposed portion of the polymer layer proximal to the sub-micron wide via-opening, thereby creating the tapered sidewall within the via hole. Factually the Examiner is not understanding the concepts involved with this process that creates the novel device. Therefore, a prima facie case of 35 U.S.C. 112, second paragraph has not been proven. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 9-10 section 4.

Claims 23, 24 and 27 have been rejected under 35 U.S.C. 112, second paragraph for failing to particularly point out and distinctly claim the subject matter. As pointed out above, the Examiner has again confused what is occurring at each step of the process. The Examiners argument that Claims 23 and 24 claim the element of the hard mask which no longer exists is dead wrong. Claims 23 and 24 do not claim the hard mask. Therefore a prima facie case of 35 U.S.C. 112, second paragraph has not been proven. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 10-11 section 6.

Claim 25 has been rejected under 35 U.S.C. 102(b) as being anticipated by Lin (U.S. Patent No. 6,515,369). The Examiner has idealized the drawings in Lin '369 to conform to what he believes the invention to be in Lin. Nowhere within Lin '369 does it disclose the elements of Claim 25. Lin '369 Figures 9 and 10 which are cited by the Examiner do not even show the elements as claimed in the present invention. Therefore, the Examiner has failed to establish a prima facie case for a 35 USC 102(b) rejection, since Lin '369 fails to patent or describe the Applicants invention. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 11 section 8.

Claim 21 has been rejected, under 35 U.S.C. §103(a) as being unpatentable over Yu et al (U.S. Patent No. 6,004,883) in view of Lin (U.S. Pub. No. 2002/0068441). There is no suggestion, teaching or motivation found in the references to practice Applicants claimed invention. See *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985) ("To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references."). Even if the Examiner's position regarding the art were taken as correct, he has failed to point out where there is a suggestion or motivation to combine these references. Therefore, the Examiner has failed to prove a prima facie case of obviousness. See Applicants further arguments in the Response to Office Action dated November 20, 2006 Section III.

Claims 22-24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Yu (U.S. Patent No. 6,004,883) in view of Lin (U.S. Pat No. 6,515,369). The Examiner has not provided any suggestion of the desirability of doing what the Applicants have done in the present invention.

Since there was no suggestion or motivation in the references, success cannot be expected to achieve what the Examiner believes is disclosed in these references. Additionally, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. There is no teaching or suggestion in the cited art of each of Applicants process and device elements, which the Examiner points to. Therefore, a prima facie case of obviousness has not been proven. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 12 section 10.

Applicants traverse that it would have been an obvious matter of design choice to define a via having an aspect ratio greater than 1, since such a modification would have involved a mere change in the size of a component, and that such change is generally recognized as being within the level of ordinary skill in the art. The size modifications within this technology field are cutting edge and continually evolving, that is the field of art, to create more precise semiconductor devices. The Examiner has failed to cite any art which can support his argument. Under 37 CFR 1.113, official notice without documentary evidence to support an Examiner's conclusion should be rare, especially when an application is under final rejection. Official notice unsupported by documentary evidence should only be taken by the Examiners where the facts asserted to be well-known, or to be common knowledge in the art, are capable of instant and unquestionable demonstration as being well-known. Applicants assert that instant and unquestionable demonstration of this knowledge is not present here. "[T]he Board cannot simply reach conclusions based on its own understanding or experience - or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings." *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697. Therefore, the Examiner has not made a prima facie case of obviousness.

Further, with respect to Claims 23 and 24, the Examiner stated that there is no disclosure of either the *critical nature of the claimed extending of the tapered sidewall in the range from one-third to one half* or any unexpected results arising therefrom. Although the specification need not disclose proportions or values as critical for Applicants to present evidence showing the proportions or values to be critical, see *In re Saunders*, 444 F.2d 599, 607, 170 USPQ 213, 220 (CCPA 1971), the Applicants have supported this claim in the specification at paragraphs [0032] and [0035]. The

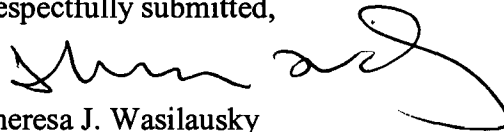
Examiner is failing to understand the technology and where in the specification disclosure can be found. Therefore, a prima facie case of obviousness has not been proven

Claims 26 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Pat No. 6,515,369). The Examiner has idealized the drawings in Lin '369 to conform to what he believes the invention to be in Lin. Nowhere within Lin '369 does it teach the elements of Claims 26 and 27. Once again, the Examiner has not provided any suggestion of the desirability of doing what the Applicants have done in the present invention. Since there is no suggestion or motivation in the reference, success cannot be expected to achieve what the Examiner believes is disclosed. Therefore, a prima facie case of obviousness has not been proven since the Examiner has failed to state where there is a suggestion or motivation to combine the reference. See Applicants further arguments in the Response to Office Action under 37 C.F.R. 1.116 submitted April 2, 2007, page 13 section 11.

In regards to the Examiner stating that in Claims 26 and 27, there is no disclosure of either the *critical nature of the claimed extending of the tapered sidewall in the range from one-third to one half* or any unexpected results arising therefrom, the Applicants respectfully traverse this argument and refer to the arguments submitted in the previous paragraphs.

Based on the above, the Applicants respectfully submit that the Examiner has failed to make a prima facie case of non-novelty and obviousness. The Applicants claimed invention is novel and not rendered obvious by any arguments submitted by the Examiner, and the claims are in condition for allowance.

Respectfully submitted,



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